IN THE CLAIMS:

Please amend originally-filed claims 1-32, as provided below. The listing of these claims are provided as follows, on separate sheets:

1 (Currently amended) A process for extraction of zinc from a material containing one or more iron oxides and zinc oxide, said process ~~including~~ comprising:

(a) heating a composite body of said material and a carbonaceous material in a reduction zone containing a reducing atmosphere at a temperature insufficient to effect melting of the iron in the material ~~but~~ at a temperature and for a time sufficient to form a reductant from said carbonaceous material and to reduce a predetermined amount of the zinc oxide to zinc vapour; and

(b) collecting said zinc vapour and cooling it to form liquefied or solid zinc.

2 (Current amended) A process according to claim 1, further ~~including~~ comprising:

(c) controlling said zinc vapour to substantially prevent or minimise its premature recondensation.

3 (Currently amended) A process according to claim 2, wherein said controlling step ~~of the zinc vapour~~ is performed to substantially prevent or minimise its premature recondensation includes providing gas flow in said reduction zone arranged to drive said zinc vapour away from said reduction zone.

4 (Currently amended) A process according to claim 3, wherein said gas flow in said reduction zone is provided generally downwardly and said vapour is driven by said gas flow laterally from the reduction zone.

5 (Currently amended) A process according to ~~any one of~~ claim~~s~~ 1 ~~to 4~~, further ~~including~~ comprising:

(d) reducing a predetermined amount of said iron oxides;

(e) further heating the reduced material from which zinc vapour has been collected to a temperature sufficient to effect melting of the iron therein; and

(f) recovering and cooling the molten iron.

6 (Currently amended) A process according to claim 5, wherein at least one of waste heat ~~and/~~or heated gases resulting from ~~said further heating~~ step (e) are utilised in said formation of said zinc vapour.

7 (Currently amended) A process according to claim 5 ~~or 6~~, ~~including~~ further comprising providing a predetermined fluxing agent whereby to form a basic slag in ~~said further heating~~ step (e) and to encourage desulphurization reactions.

8 (Currently amended) A process according to claim 5,~~6 or 7~~ wherein ~~said respective heating~~ steps (a) and (e) are carried out in separate furnace chambers.

9 (Currently amended) A process according to ~~any one of~~ claim~~s~~ 5 ~~to 8~~, further ~~including~~ comprising extracting lead from said material, wherein ~~said further heating~~ step (e) effectuates the melting~~s~~ the lead, which is separated and recovered from the melt.

10 (Currently amended) A process according to ~~any preceding~~ claim 1, wherein the material containing one or more iron oxides and zinc oxide is electric arc furnace (EAF) dust.

11 (Currently amended) A process according to ~~any preceding~~ claim 1, wherein said carbonaceous material is finely divided brown coal or peat.

12 (Currently amended) A process according to ~~any preceding~~ claim 1, further ~~including~~ comprising forming said composite body by mixing a carbonaceous material with the material containing one or more iron oxides and zinc oxide to produce a cohesive mass, and compacting the cohesive mass to produce the composite body.

13 (Currently amended) A process according to ~~any preceding~~ claim 1, wherein said composite body is a pellet.

14 (Currently amended) A process according to claim 13 when appended to claim 12, further comprising ~~including~~ forming said pellet by extrusion of the cohesive mass.

15 (Currently amended) A process according to ~~any preceding~~ claim 1, wherein the amount of carbonaceous material in said composite body is such that, when combusted in said heating step or steps, the carbonaceous material provides at least sufficient heat for its carbonisation and for reduction of the zinc and iron oxides and, if recovered, lead oxide, in said material containing one or more iron oxides and zinc oxide.

16 (Currently amended) A process according to ~~any preceding~~ claim 1, wherein~~, heating~~ step (a) ~~of the inventive process~~ is conducted in a furnace chamber.

17 (Currently amended) Apparatus for extraction of zinc from a material containing one or more iron oxides and zinc oxide, ~~including~~ comprising:

a first furnace chamber for receiving composite bodies that include said material and a carbonaceous material, ~~which~~ wherein the first furnace chamber defines a reduction zone in which said composite bodies may be heated at a temperature insufficient to effect melting of the iron in the material but at a temperature and for a time sufficient to form a reductant from said carbonaceous material and to reduce a predetermined amount of the zinc oxide to zinc vapour;

a first arrangement configured~~means~~ to collect said zinc vapour from the first furnace chamber; and

a second arrangement configured~~means~~ to receive said collected zinc vapour for cooling the vapour to form liquefied or solid zinc.

18 (Currently amended) Apparatus according to claim 17, further comprising a third arrangement configured to ~~including means for~~ control~~ling~~ said zinc vapour to substantially prevent or minimise its premature recondensation.

19 (Currently amended) Apparatus according to claim 18, wherein said third arrangement ~~means for controlling said zinc vapour~~ includes ~~means~~ a further arrangement associated

with said first furnace chamber whereby said zinc vapour is driven away from said reduction zone.

20 (Currently amended) Apparatus according to claim 19, wherein said gas flow in said reduction zone is provided generally downwardly and said zinc vapour is driven by said gas flow laterally for the reduction zone.

21 (Currently amended) Apparatus according to ~~any one of~~ claim~~s~~ 17 ~~to 20~~, further ~~including~~ comprising:

a second furnace chamber in communication with said first furnace chamber to receive therefrom reduced material from which said zinc vapour has been collected;

a heating arrangement configured to ~~means for~~ further heat~~ing~~ the recovered material in the second furnace chamber to a temperature sufficient to effect melting of the iron therein; and

a fourth arrangement configured ~~means~~ to recover and cool the molten iron.

22 (Currently amended) Apparatus according to claim 21, wherein said first and second furnace chambers are arranged so that waste heat and/or heated gases from said further heating are utilised in formation of said zinc vapour in the first furnace chamber.

23 (Currently amended) Apparatus according to claim 21 ~~or 22~~; further ~~including means~~ a fifth arrangement configured to tap slag from said second furnace chamber.

24 (Currently amended) Apparatus according to claim 21,~~22 or 23~~ further ~~including means~~ a sixth arrangement configured to tap molten lead from said second furnace chamber.

25 (Currently amended) Apparatus according to ~~any one of~~ claim~~s~~ 21 ~~to 24~~, wherein said second furnace chamber is vertically below the first furnace chamber such that said reduced material is continuously fed into the second furnace chamber under gravity.

26 (Currently amended) Apparatus according to ~~any one of~~ claim~~s~~ 21 ~~to 25~~, wherein said heating arrangement ~~means~~ is an external electrical heating arrangement ~~means~~.

27 (Currently amended) Apparatus according to ~~any one of~~ claim~~s~~ 17 ~~to 26~~, wherein said ~~means~~ first furnace chamber defining a cooling zone comprises a zinc vapour condenser in communication with an outlet from said reducing zone comprising ~~the~~ a zinc vapour collecting arrangement ~~means~~.

28 (Currently amended) Apparatus according to claim 27, wherein said condenser ~~is~~ includes a zinc splash condenser.

29 (Currently amended) Apparatus according to claim 27~~ or 28~~, wherein said condenser includes a main condenser chamber having an inlet for receiving zinc vapour positioned

above the base of the main condenser chamber such that condensed zinc does not pass back into the furnace chamber.

30 (Currently amended) Apparatus according to claim 27,~~28 or 29,~~ wherein said main condenser chamber surrounds a vapour conduit, the open end of which forms the vapour inlet, extending from said outlet from the reduction zone to a region of the condenser above its base.

31 (Currently amended) Apparatus according to ~~any one of~~ claim~~s~~ 27 ~~to 30~~, wherein a vapour conduit extends in a lateral direction from the furnace outlet into an upper region of the condenser chamber.

32 (Currently amended) Apparatus according to ~~any one of~~ claim~~s~~ 17 ~~to 31~~, ~~including~~ comprising:

a thermally insulated casing defining said first furnace chamber therein;

one or more columns provided within said first furnace chamber, each column comprising a plurality of vertically orientated, vertically spaced, heat resistant tubes, wherein the cross-sectional area of each tube is smaller than that of an adjacent, lower tube, and wherein the ends of adjacent tubes are arranged so as to provide an annular space therebetween;~~,~~

an inlet through which a combustible charge is fed into the uppermost tube;~~,~~

an outlet from which reacted charge is removed from the lowermost tube; and

a fluid conduit for conveying combustible volatiles evolved by heating said charge to a gas burning means for combustion, to thereby provide heat to said first furnace chamber.